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Assessment of critical raw material potential from Cu-Au deposits through the European Ion4Raw project

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Abstract

In a context of climate change and global renewable energy policy, rapid growth of emerging economies as well as fast development of modern technologies have led to drastic increase in demand for a number of metals. Thus, reliability of supply in critical raw materials is one of the major challenges facing Europe. Indeed, the availability of mineral resources is crucial in deployment of low-carbon technologies and economic activities. However, distribution of these critical raw materials is fairly restricted and their recovery is limited to a few deposit types during processes of the main ore. For instance, indium is recovered as by-product of zinc mineralization.

Thus, the European project Ion4Raw (H2020 program) with a partnership from EU members and a Peruvian partner is an ambitious initiative, which aims to develop a novel and sustainable ion-metallurgical processing in order to recover effectively by-products of high interest such as bismuth, cobalt, germanium, indium, antimony and platinum from various types of Cu-Au deposits (e.g., orogenic, skarns, volcanic-hosted massive sulphide (VMS)).

In the frame of this project, one of the first step is to produce a geographically-based compilation of Cu-Au occurrences and deposits in Europe and Peru in which targeted by-products (e.g., Te, Bi, Co, Re, Mo, Pt, Sb, Ge) have been identified and/or have been produced. This inventory allows economical assessment of potential resources as well as assessment of metallogenic processes related these critical raw material endowments.